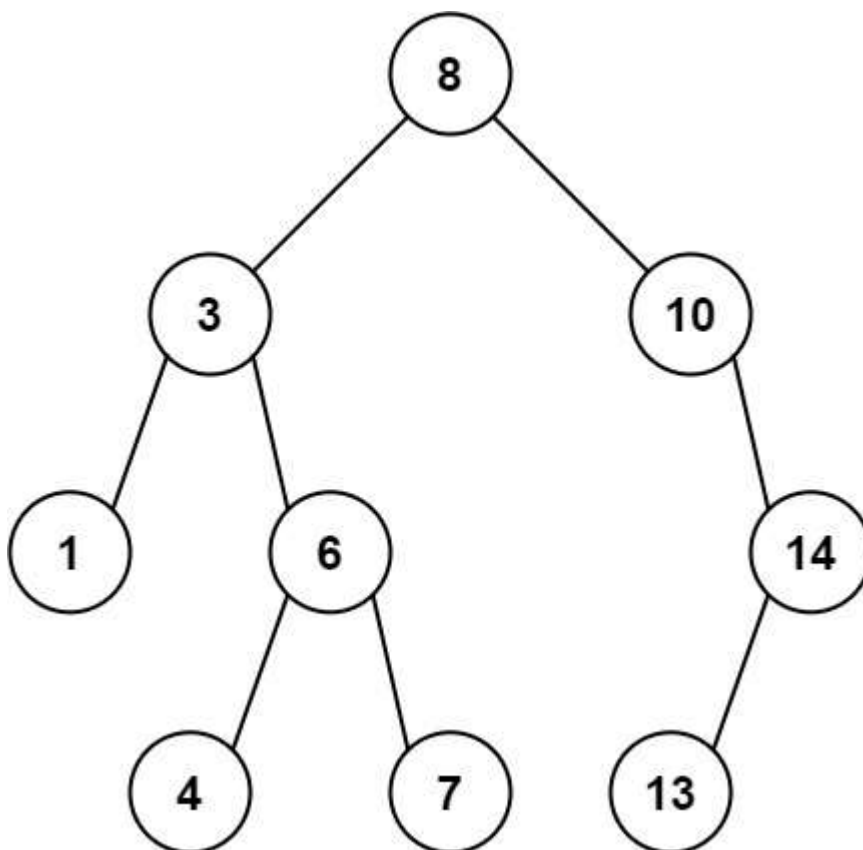


Maximum Difference Between Node and Ancestor [\(View\)](#)

Given the root of a binary tree, find the maximum value v for which there exist **different** nodes a and b where $v = |a.val - b.val|$ and a is an ancestor of b .

A node a is an ancestor of b if either: any child of a is equal to b or any child of a is an ancestor of b .

Example 1:



Input: root = [8,3,10,1,6,null,14,null,null,4,7,13]

Output: 7

Explanation: We have various ancestor-node differences, some of which are given below :

$$|8 - 3| = 5$$

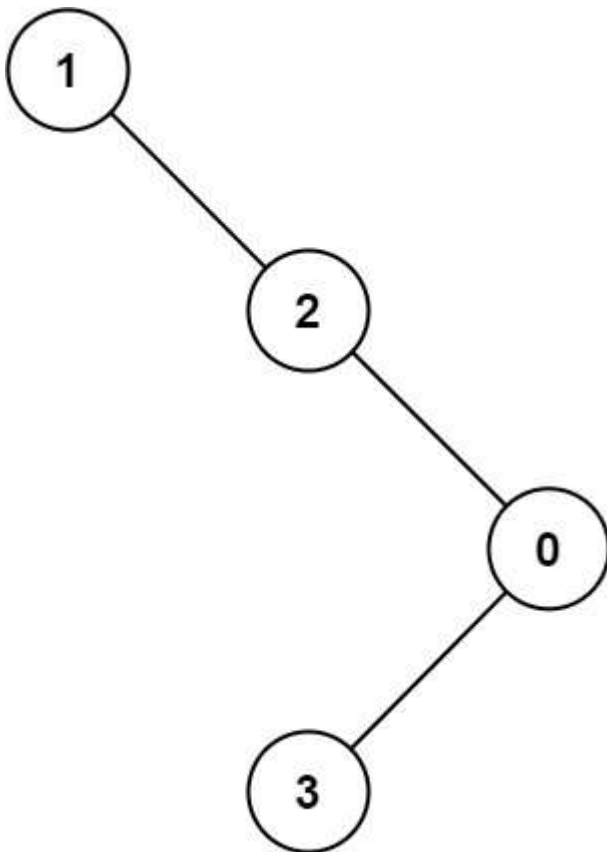
$$|3 - 7| = 4$$

$$|8 - 1| = 7$$

$$|10 - 13| = 3$$

Among all possible differences, the maximum value of 7 is obtained by $|8 - 1| = 7$.

Example 2:



Input: root = [1,null,2,null,0,3]

Output: 3

Constraints:

- The number of nodes in the tree is in the range [2, 5000].
- $0 \leq \text{Node.val} \leq 10^9$